

Optimization of communication in the surgical program via instant messaging, Web-based surveys, newsletters, websites, smartphones and telemedicine: the experience of Oakville Trafalgar Memorial Hospital

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SUMMARY

As our surgical program has rapidly expanded, new modalities are required for safe, effective and efficient communication. In this discussion we review how we have used Web-based survey tools, the Signal instant messaging app, a new departmental newsletter, personal surgeon office websites, a department of surgery website and encrypted video calls via the Ontario Telemedicine Network to address our evolving communication needs.

A surgical program comprises many different essential parts, including the operating room (OR), post-anesthesia care unit, same day surgery unit, preadmission clinic, inpatient floors, medical device reprocessing unit and numerous nursing staff, support staff and medical staff. Poor communication at times can lead to poor patient care. Effective and efficient communication between these many disparate locations and caregivers requires the use of a variety of communication modalities, such as the smartphone, which has been shown to be safe and effective in this application.¹

Oakville Trafalgar Memorial Hospital is a 469-bed facility in Oakville, Ont., and, in 2016, performed 13 401 surgical procedures. In December 2015 we moved to a new 1.5 million square foot facility, three times larger than the previous hospital. This introduced a variety of communication challenges which we approached in the manner described in this article.

SURVEYMONKEY

Using the Web-based tool SurveyMonkey, we created a 17-question survey (Appendix 1, available at canjsurg.ca/004418-a1) asking for feedback about the state of communications in the surgical program. We released the survey to the OR staff and surgeons in December 2017. We reviewed the results and implemented a variety of different strategies in rapid succession.

ENCRYPTED INSTANT MESSAGING WITH THE SIGNAL APP

We have a diverse group of caregivers in our department, including nursing staff, surgeons, anesthesiologists, anesthesia assistants, surgical assistants, support staff and clerical staff. These different groups have different needs at different times. Unfortunately, a lack of communication can lead to a perception of confusion, inefficiency and disrespect and to the loss of significant resources. For example, it has been reported that time in the OR can cost up to \$133 dollars a minute.²

In January 2018 we decided to trial Signal (www.signal.org), an open-source, no-cost, encrypted group-based, site-to-site instant messaging system that works on Apple and Android smartphones and on desktop computers.³ After installing the Signal app on a smartphone, a chat group with other caregivers can be created. For example, today's on-call group could include the anesthesiologist, all surgeons on call, the surgical assistant, OR nurses, charge nurse, clerical staff in the OR and labour and delivery, obstetrician, and support staff. This allows real-time communication and problem solving: What cases are pending? Who is next? Are there other issues? The possibilities are endless.

The use of this app is voluntary in our program, and staff and surgeons use their personal smartphones, resulting in no cost to the institution. We are currently not using it for any confidential patient information as we evaluate the app for compliance with the *Personal Health Information Protection Act of Ontario* (PHIPA).

We have started discharging patients earlier, because we know down to the minute when someone is needed in the OR and use the changeover time to go to the inpatient floor, the emergency department, radiology, or other departments as needed. Saving just five minutes per case on six cases leads to 30 extra minutes of OR availability, which allows, for example, an add-on appendectomy to be performed at the end of the elective list, reducing nursing overtime and shortening the number of cases on the ever-growing add-on evening list.

Imagine if all the surgeons in a division were members of a Signal group. A surgeon on call could easily post a clinical scenario, get advice from colleagues, and potentially get OR assistance if needed.

NEWSLETTERS

To communicate with all caregivers in the surgical program, we developed a monthly newsletter that is emailed to all 263 members of the Department of Surgery at the beginning of each month and outlines all ongoing developments in the surgical program. This newsletter has improved departmental communication and team building.

WEBSITES

How do patients or referring family physicians select a specialist and determine their skills, training and field of practice? How do they find out their contact information or hours of operation? We have encouraged all surgical staff to develop and maintain their own office websites. Widespread dissemination of an office website address can improve office efficiency significantly by reducing phone calls to the office. It can also enhance patient care by providing the appropriate physician and care information.

Examples of some of the surgeons' office websites include drrozario.com, drichoy.com, gintyortho.com, and drpampaloni.com

In addition, Google business accounts or Bing business accounts are available at no charge and can display a variety of information about a medical practice when a search engine is used to find a surgeon.

In January 2018 we also developed a Department of Surgery website (oakvillesurgery.com) where we list all active staff and can promote the latest initiatives, such as the use of the Ontario Telemedicine Network (OTN), Signal, National Surgical Quality Improvement Program (NSQIP), communication enhancements, OR rules and regulations, upcoming meetings, new initiatives and a variety of nonconfidential information.

TELEMEDICINE: THE eVISIT VIA THE OTN

Unfortunately, access to medical care is filled with a variety of barriers, including financial barriers such as time off work and parking costs. There are time constraints, including the need for child care and household responsibilities. There is the requirement for transportation, sometimes over tremendous distances. There's also the question of need: does going to my physician give me value, or could I just use Google on my smartphone to find health advice?

Physicians work a limited number of hours on limited days, and most payers do not remunerate for telephone calls with patients. In the age of smartphones and Amazon, where patients can get the latest medical books in 12 hours, it is understandable that patients want medical care on their schedules and on their terms.

The OTN is a provincial organization that facilitates encrypted real-time video communication (video chat) with patients. The intent is to enhance access and convenience for patients and to generate overall cost savings. Our department started to use eVisits in February 2018. Services we can provide via video chat include routine follow-up visits, reviewing pathology or other test or imaging results, or assessing surgical incisions, all while allowing the patient to remain in the comfort of their chosen venue. In northern climates, an added benefit to patients, particularly those with mobility issues, those in poor health and those who are immunosuppressed from chemotherapy, is that eVisits decrease the need to travel in poor weather.⁴ Unlike a phone call, video chats allow a much more profound degree of communication, including assessment of nonverbal cues and body language, and can help a surgeon decide whether the eVisit has been adequate or whether an in-person visit is needed.

If the OTN is used for an eVisit, the physician can bill a standard Ontario Health Insurance Plan (OHIP) visit fee plus a bonus eVisit fee. Other payers may have similar fees. There are also fees that can be billed if the patient does not

show for an eVisit or if the visit needs to be cancelled because of technical problems. If that happens we call our patients and discuss their care on the phone. We have also started a program to communicate via prebooked eVisit with patients the day after surgery to review the surgery, assess pain control and optimize the patient experience.

It should be noted that such initiatives should be led by the departments of surgery. eVisits are simply another tool on our tool belts. Seeing patients in person, physical examinations and the therapeutic touch will never be completely replaced.

CONCLUSION

In the modern era of cost containment balanced with the need to enhance patient care and the patient experience, it is imperative to use available technology to optimize the methods of communication in any hospital.⁵ A surgical program has very unique communication needs that are amenable to the adoption of modern means, such as Web-based surveying. Instant multimedia messaging is an obvious replacement for the pager, given the ubiquitous nature of smartphones, and it can stratify calls based on clinical need. Reducing interruptions in care from pagers and overhead calls can improve efficiency and patient care. Hospital departments and personal surgeon offices can easily benefit from the use of well-designed and maintained websites. Team building is an important conse-

quence of enhancing the communication among team members. Finally, we must carefully consider security and privacy needs as we adopt cutting-edge technology.

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References

1. Johnston MJ, King D, Arora S, et al. Smartphones let surgeons know WhatsApp: an analysis of communication in emergency surgical teams. *Am J Surg* 2015;209:45-51.
2. Macario A. What does one minute of operating room time cost? *J Clin Anesth* 2010;22:233-6.
3. Cohn-Gordon K, Cremers C, Dowling B, et al. A formal security analysis of the Signal messaging protocol. IEEE European Symposium on Security and Privacy (EuroS&P) 2017 April 26-28. DOI:10.1109/EuroSP.2017.27
4. Ballester S, Scott MF, Owei L, et al. Patient preference for time-saving telehealth postoperative visits after routine surgery in an urban setting. *Surgery* 2018;163:672-9.
5. Ellanti P, Moriarty A, Coughlan F, et al. The use of WhatsApp. Smartphone messaging improves communication efficiency within an orthopaedic surgery team. *Cureus* 2017;9:e1040.